

IN THE CLAIMS

- 1 1. (Currently Amended) A method of inducing an immune response in a fish against one or more
2 pathogens which comprises:
3 transforming a bacterium with a eukaryotic expression vector comprising DNA of interest
4 encoding at least one protein antigen for each of the pathogens;
5 killing the bacterium;
6 immersing the fish in a solution comprised of the transformed killed bacterium to effect the
7 expression of the protein antigen by the fish to induce an immune response in the fish.
- 1 2. The method according to claim 1 wherein the fish is selected from the group of finfish.
- 1 3. The method according to claim 2 wherein the bacterium is selected from the group consisting
2 of *E. coli* and *V. anguillarum*.
- 1 4. (Currently Amended) The method according to claim 3 wherein the DNA of interest is
2 selected from the group consisting of *p57* gene from *Renibacterium salmoninarum*, ~~[[the]]~~ *empa*
3 gene from *Vibrio anguillarum*, ~~[[the]]~~ *aspa* gene from *Aeromonas salmonicida*, ~~[[the]]~~ *omp48* and
4 ~~*omp38*~~ genes from *Aeromonas veronii*, *omp38* genes from *Aeromonas veronii* and the genes coding
5 for the G proteins from the Infectious Hematopoietic Necrosis Virus and genes coding for the G
6 proteins the Viral Hemorrhagic Septicemia Virus.
- 1 5. (Currently Amended) The method according to claim 4 wherein ~~[[the]]~~ plasmid
2 comprises a promoter of fish origin, a polyadenylation signal of fish origin and a kanamycin
3 resistance cassette.
- 1 6. (Original) The method according to claim 1 wherein the bacterium comprises an avirulent
2 strain of *V.anguillarum*, the strain characterized in that it is incapable of expressing a functional
3 *mugA* protein.
- 1 7. (Withdrawn) A method of inducing an immune response in a fish against one or more

2 pathogens which comprises:

3 immersing the fish in a solution comprised of a live, attenuated strain of *V. anguillarum*, the
4 strain characterized in that it is incapable of expressing a functional *mugA* protein, the strain having
5 incorporated therein a plasmid comprising:

6 DNA of interest encoding at least one protein antigen for each of the pathogens, the method
7 characterized in that the protein antigen is produced by the fish.

1 8. (Withdrawn) The method according to claim 7 wherein the fish is selected from the group of
2 finfish.

1 9. (Withdrawn-Currently Amended) A method of inducing an immune response in a fish
2 against one or more pathogens which comprises:

3 immersing the fish in a solution comprised of a dead, attenuated strain of *V. anguillarum*, the
4 strain characterized in that it is incapable of expressing a functional *mugA* protein, the strain having
5 incorporated therein a plasmid comprising:

6 DNA of interest encoding at least one protein antigen for each of the pathogens, the method
7 characterized in that the protein antigen is produced by the fish to induce an immune response in the
8 fish.

1 10. (Withdrawn) The method according to claim 9 wherein the fish is selected from the group of
2 finfish.

1 11. (Withdrawn-Currently Amended) A method for the delivery of DNA in a fish which
2 comprises:

3 transforming a bacterium with a plasmid comprising DNA of interest encoding at least one
4 protein; and

5 immersing the fish in a solution comprised of the dead, whole celled, bacterium to effect the
6 production of the protein by the fish such that the DNA is delivered to the fish.

1 12. (Withdrawn) The method according to claim 11 wherein the DNA of interest is selected
2 from the group consisting of of *p57* gene from *Renibacterium salmoninarum*, the *empa* gene from

3 *Vibrio anguillarum*, the *aspa* gene from *Aeromonas salmonicida*, the *omp48* and *omp38* genes from
4 *Aeromonas veronii*, and the genes coding for the G proteins from the Infectious Hematopoietic
5 Necrosis Virus and the Viral Hemorrhagic Septicemia Virus.

1 13. (Withdrawn) The method according to claim 12 wherein the fish is selected from the group
2 consisting of finfish.

1 14. (Withdrawn) The method according to claim 13 wherein the bacterium is selected from the
2 group consisting of *E. coli*, *Vibrio.anguillarum*, *Aeromonas salmonicida*, wild-type *Vibrio* spp,
3 *Yersinia ruckeri*, *Aeromonas veronii*, *Aeromonas hydrophila*, and *Edwardsiella ictaluri*.

1 15. (Withdrawn) The method according to claim 14 wherein the plasmid comprises a fish
2 promoter, a polyadenylation signal of fish origin and a kanamycin resistance cassette.

1 16. (Withdrawn) The method according to claim 15 wherein the polyadenylation signal is
2 wolfish AFP poly A.

1 17. (Withdrawn) The method according to claim 11 wherein the bacterium comprises an
2 avirulent strain of *V. anguillarum*, the strain characterized in that it is incapable of expressing a
3 functional *mugA* protein.